Supplementary Appendix

Supplementary Table 1. 2012 European guideline cardiovascular risk factor targets.[1]

Risk factor	Recommended target
HbA1c	<7%
Systolic blood pressure	<140 mmHg
Diastolic blood pressure	<90 mmHg
LDL-C	
Low- and moderate-risk patients	<3.0 mmol/L (~115 mg/dL)
High risk patients	<2.5 mmol/L (~100 mg/dL) or 50% reduction
Very high-risk patients	<1.8 mmol/L (~70 mg/dL) or 50% reduction

HbA1c, glycated haemoglobin; LDL-C, low-density lipoprotein cholesterol.

Supplementary Table 2. List of International ChoLesterol management Practice Study (ICLPS) investigators and patient enrolment numbers.

Region	Country	Patients enrolled, *n*	Principal Investigator/National Coordinator
Eastern Europe (*n* = 846, 9.3%)	Russia	349	Yuri Karpov (Principal Investigator and National Coordinator), Russian Cardiology Research & Development Complex, Moscow, Russia
	Ukraine	497	Olena Mitchenko (National Coordinator), National Scientific Center: "M.D. Strazhesko Institute of Cardiology" Academy of Medical Sciences of Ukraine, Narodnogo Opolcheniya Kyiv, Ukraine
Asia (*n* = 3546, 39.2%)	Bangladesh	499	Abdul Wadud Chowdhury (Principal Investigator and National Coordinator), Dhaka Medical College Hospital, Dhaka, Bangladesh
	India	2013	Kaul Upendra (Principal Investigator and National Coordinator), Fortis Escorts Heart Institute & Research Centre, Fortis Hospitals, New Delhi, India
	South Korea	1034	Kim Sung Rae (National Coordinator), Bucheon St. Mary's Hospital, Wonmi-gu, Bucheon-si, Gyeonggi-do, Republic of Korea.
			Choi Sung-Hee (National Coordinator), Seoul National University Bundang Hospital, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea
Africa (*n* = 881, 9.7%)	Algeria	485	Abdelkrim Berrah (National Coordinator), Service de Médecine Interne, Centre Hospitalo-Universitaire, Mohamed Lamine Debaghine Bab El Oued, 16000 Algiers, Algeria
	South Africa	396	Dirk Blom (Principal Investigator and National Coordinator), Lipid Laboratory, University of Cape Town, Cape Town, South Africa
Middle East (*n* = 1890, 20.9%)	Israel	99	Yossi Azuri (Principal Investigator and National Coordinator), Maccabi Health Care Services, Tel Aviv, Israel
	Kuwait	150	Mohammed Zubaid (Principal Investigator and National Coordinator), Mubarak Hospital, Jabriya, Kuwait
	Oman	97	Khalid Al Rasahdi (Principal Investigator and National Coordinator), Sultan Qaboos University, Muscat, Oman
	Lebanon	200	Rabih Azar (Principal Investigator and National Coordinator), Hotel Dieu De France Hospital, Rue al Syrian, Ashrafieh, Beirut, Lebanon

	Saudi Arabia	231	Mohammed Balgaith (Principal Investigator and National Coordinator), Cardiology Center, National Guard Hospital, Riyadh, Saudi Arabia
	Turkey	830	Meral Kayıkçıoğlu (Principal Investigator and National Coordinator), Ege University Faculty of Medicine Department of Cardiology, Bornova, İzmir, Turkey
	United Arab Emirates	283	Wael Mahameed (National Coordinator), Sheikh Khalifa Medical City, Abu Dhabi, United Arab Emirates
Latin America (*n* = 1886, 20.8%)	Argentina	307	Carlos Alberto Cuneo (Principal Investigator and National Coordinator), Prevencion Cardiovascular Salta, Provincia de Salta, Argentina
	Brazil	499	Raul Santos (Principal Investigator and National Coordinator), Instituto Do Coração Do Hospital Das Clínicas Da Faculdade De Medicina Da Universidade De São Paulo, São Paulo, Brazil
	Colombia	454	Alvaro J. Ruiz (National Coordinator), San Ignacio Hospital, Pontificia Universidad Javeriana, Bogotá, Colombia
	Mexico	626	Carlos A. Aguilar Salinas (Principal Investigator), Instituto Nacional de Ciencias Medicas y Nutricion, Mexico City, Mexico
Total population		9049	

ICLPS, International ChoLesterol management Practice Study.

Investigators who enrolled at least one patient

Algeria: Hadjissa Khadidja, Zebbar Nacerddine, Gouader Moussa, Senouci Fatima, Benissad Houria, Tazdait Rafik, Hamidouche Karima, Ayache Ahmed, Achaibou Rachid, Dahmane Saida, Benkhodja Mohamed Bachir, Louaifi Ali, Remili Rachid, Benbouabdellah Belkacem, Hadjkali Abdelhamid, Manseur Fahima, Bertal Sabra Amina, Methia Nadira, Kadour Fatima, Latreche Samia, Agrane Khadidja, Menzou Farouk, Kichou Brahim, Djellaoudji Azzouz, Khelil Saida, Ghemri Sofiane, Nibouche Djamel Eddine, Djeghri Nora, Belguedj Rinda, AbdelBaki Mourad, Kachenoura Aldjiia, Krim Messaad, Belkadi Zahoua, Henine Nora, Aoudia Yazid, Aouiche Samir, Yakhou Mohamed, Belhadj Fatima, Merdjana Karima, Ziani Samia, Benatmane Houria, Zellat Khiera, Faraoun Khadra, Douar Malika, Djafri Yasmina, Bouamrane Nadia, Cherief Fadila, Khellaf Hadda, Zidani Hocine, Baghous Houssem.

Argentina: Carlos Alberto Cuneo, Gabriel Dario Waisman, Jorge Roberto Aiub, Alejandro Hershson, Carol Kotliar, Julio Andres Vallejos, Juan Carlos Medrano, Alberto Juan Lorenzatti, Alfredo Lozada, Pablo Corral.

Bangladesh: Chowdhury Abdul Wadud, Haque Azizul, Chakraborti Rajashish, Hussain Md. Tofazzal, Reza Salim, Uddin Mir Jamal, Amin Mohammad Gaffar, Islam Abul Hasan Md. Waliul, Rahman Md. Toufiqur, Akter Mohammed Shamim, Khan Kaiser Nasrullah, Hossain Tanjina, Prasad Indrajit, Amin Ahsanul Haque, Ishaque S M, Habib Maruf Bin, Ali Hassan Kazi, Rabbani Raihan, Bhowmik Nirmalendu Bikash, Hassan Mohammad Nabiul.

Brazil: Dias Raul, Izar Maria Cristina, Saporito Wladimir, Cesena Fernando, Saraiva Jose, Maia Lilia, Ardito Wilma, Ayoub Jose, Manenti Euler, Fontana Hugo, Moraes João, Hissa Miguel, Pedrosa Hermelinda, Antunes Daniela, Lisboa Hugo, Oigman Willie, Silva Antonio, Lima Sonia, Isaia Carlos, Giraldez Viviane, Rossi Fabio.

Colombia: Puerta Carlos Felipe, Rincon Nelson Andres, Quintero Stella, Fandiño Alberto, Abaunza Leonidas, Jacome Andres Mauricio, Lenis Claudia Patricia, Lossa Claudia, Holguin Diego, Orozco Liliana, García Olga Lucia, Balaguera Jose Francisco, Cohen Luz Helena, Sotomayor Aristides, Jaramillo Carlos Francisco, Murillo Nelson, Lievano Manuel, Vesga Boris, Quintero Adalberto, Pantoja Dolly, Chacon Maria del Pilar, Lujan Dilcia Maria, Yepes Carlos Augusto, Lopez Claudia Tatiana, Yupanqui Hernan, Botero José Fernando, Yepes Emerson, Ibarra Jaime, Rueda Javier Enrique, Florez Jose Luis, Molina Dora, Coronel Julian.

India: Kaul Upendra, Krishnamurthy Deepak, Chandra Subash, Reddy Y Vijaya Chandra, Chopda Manoj, Sinha Sudhir Chandra, Kesavamurthy C B, Khan Idris Ahmed, Dave Tarun, Kawthekar Girish, Chopra Vijay Kumar, Kothari Dipesh, Kumar Ravi, Singh Kiran Pal, Ballani Piya, Modi K D, Sanyal Debmalya, Prabhu Mukhyaprana, Nagendar Jakka, Sharma Surender Kumar, Patnala Sreedevi, Shah Jayesh, Shah Siddharth, Roy Amitabha, Jain Gaurav, Sanghvi M D, Mutha Abhay, Dani Praveen, Madhavan R, Gupta JB, Bhattacharyya Paramartha, Somani Vinod, Rohatgi Gyanendra Mohan, Sanghvi Snehal, Vasudevan Sujit, Verma Sachin, Ganga Kiran, Gupta Rajeev, Verma Sanjay, Gangakhed Satish Kumar, Beswal Gaurav, J Ramdas, Mallikarjuna Rao KV, Vadavi Arun,

Marya Rajesh, Mathew Joy, Rau Ram Mohan, Manu Sharma, Sonawane Sandeep, Ravindra Sethiya, Gandhi Sanjay, Mathew S, Kalanitthi A, Shah Ashok, Mahajan Sanjay, Pathak HS, Julka Sandeep, Gupta Sanjay, Nagre Santosh, Dhand Sunil, Bannerjee Abhijeet, T Madana Mohan, Haldar Susovan, George Abraham P, Agarwal Sanjay, Gheewala Nalin, Jain Pradeep Kumar, Tewari Ajoy K, Baldawa Vishnu, Kumar JS, Khanna Monica, Mathai Johnson, Rao Sanjay, Poddar Mahesh, Mane Rajendra, Sethia Ashok, Rao Visweswar, Perumal Nalla, Kumar J.Aman, Kongara Srikanth, Hari K, Tongaonkar Aniruddha, Gupta Sanjeev, Marda Mahesh, Jain Sunil, Sethi Kamal Kumar, Razzak MA, Rao Dayasagar, Dhar Pramod Kumar, Shah Devang.

Israel: Orlovsky Sophia, Chornia Larisa, Ciuraru George, Feldman Arie, Doctor Ruth, Eliyahu Vered, Radzinski Irena, Pomeranz Avishalom, Golzman Boris, Geva Adi.

Republic of Korea: Sung-Il Sohn, Sung-Hee Choi, Yong-Jin Kim, Seung-Jin Oh, Jin-Ho Shin, Bo-Hyun Kim, Woo-Keun Seo, Jae-Kwan Cha, Kyoung-Im Cho, Hye-Soon Kim, Jin-Won Kim, Sang-Chol Lee, Shin-Jae Kim, Sang-Yong Kim, Jung-Rae Cho, Jung-Sun Kim, Kyung-Mook Choi, Soon-Hee Lee, Kang-Wook Lee.

Kuwait: Zubaid Mohammed, Farrag Ebrahim, Saad Hisham, Abd Al Monem Amro, Hasan Ebrahim, Mekhaeil Medhat, Lashin Ebrahim.

Lebanon: Mouawad Walid, Keshishian Sahak, Amm Mireille, Andari Emile, Zind Romel, Ballout Hajar, Mohamad Malek, Moukheiber Sami, Abdel Massih Tony, Azar Rabih.

Mexico: César Gonzalo Calvo Vargas, Edmundo Bayram llamas, Esperanza Martinez Abundis, Gerardo Andres Baez Vargas, Pedro Mendoza Martinez, Rodrigo Navarrete Valencia, Bernardo Emilio Valenzuela Salazar, Francisco Javier Robledo Gutierrez, Alfredo Nacoud Askar, Carlos Alberto Aguilar Salinas, Sergio Zuñiga Guajardo, Maria Elena Cedano Limon, Roberto Bejarano Rodriguez, Lirio de Maria Delgado Garcia, Juan Carlos Villanueva Arias, Lucia Alejandra Castillo Vigna, José Gerardo Gonzalez Gonzalez, Martha Leticia López Velazco.

Oman: Khalid Al Rasahdi, Khalid Al Wali, Mustafa Al Hinai, Ali Mamari, Omayma Elshafaie, Mehar Ali.

Russia: Karpov Yuri, Ezhov Marat, Khaisheva Larisa, Lyamina Nadezhda, Viktorova Inna, Kosmacheva Elena, Khasanov Niyaz, Libis Roman, Tretyakova Tatyana, Koziolova Natalya, Eliseeva Liudmila, Napalkov Dmitriy, Karetnikova Victoriya, Boytsov Sergey.

Saudi Arabia: Shukri Al Sail, Osama El Khateeb, Maryam Al Qaseer, Rashid Al Jawair, Eman Ashgar, Abdulwahab Bawahab, Hassan El Sayed, Mohammed Balgith.

South Africa: Blom Dirk, Amod Aslam, Chelin Neville, Coetzee Kathleen, Corbett Clive, Fouche Leon, Fourie Nyda, Govind Uttam, Joshi Shaifali, Kapp Cornelia, Kotze Hester, Makan Hemant, Mahomed Akbar, Ngcakani Nomangesi Judith, Padayachee Trevenesan, Raal Frederick, Seedat Saadiya, Snyman Hans, Trokis Julien.

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Turkey: Kayıkçıoğlu Meral, Akbulut Mehmet, Arık Osman Ziya, Ural Dilek, Yılmaz Remzi, Öner Abdülvedat, Karahan Burhan, Örem Cihan, Temizhan Ahmet, Erdoğu İsmail, Kemaloğlu Melek Didem, Kırma Cevat, Altunkeser Bülent Behlül, Gökçe Mustafa, Şabanoğlu Cengiz, Aksoy Mehmet, Şahin Mahmut, Taştan Ahmet, Keser Ahmet, Köseoğlu Cemal, Tunçer Eşref, Demir Erdem, Yüksel Gülhan, Altın Cihan, Kanadaşı Mehmet, Aksakal Aytekin, Oğuz Aytekin, Arkan Tuğba, Bilgi Mustafa, Kamberoğlu Seyfi, Gülsün Mehmet Sıdık, Çakır Murat, Şahin Nedim, Sakar Mehmet, Akyer Erdal, Karaca Elyesa, Eralp Ahmet Bülent, Bozkuş Rıfat, Develioğlu Hülya, Ocak Serin Sibel, Özer Necla, Şeker Taner, Koç Mevlüt, Sağ Saim, Çabuk Ali Kemal, Üstün Emel, Şirin Yusuf, Uçar Ender, Ergene Asım Oktay, Dursun Hüseyin, Alioğlu Emin, Kilci Hakan, Ertem Ahmet Göktuğ, Aytekin Saide, Yeter Ekrem, Şahin Alparslan, Bayram Fahri, Özentürk Cihan, Dal Kürşat, Çiçek Sümeyye, Doğan Cemile Elvin, Yiğit Sevil, Mazı Emrah Erkan, Kaya Emine, Şengün Ahmet, Okur Hasan Caner, Terzioğlu Nevin, Aktürk Müjde Yeşim, Şahin İbrahim, Acar Bilal, Atay Ahmet Engin, Yılmaz Ozan, İhsan Habiboğlu, Demirtunç Refik, Çetin Nezih Abdullah, Bambul Nail, Cengiz Mahir, Karakaş Mustafa Serkan, Özdemir Zeynep Tuğba, Kayıkçıoğlu Sezgi.

Ukraine: Olga Garkavenko, Lilia Kisilevych, Vadym Romanov, Olena Matova, Mariia Egorova, Inna Kovaleva, Evgen Andreev, Oleksandr Galetsky, Iryna Chulaevska, Iryna Sichkaruk, Olena Chirva, Pavlo Kaplan, Oleg Leshchuk, Olga Verbovska, Olena Karlinska, Ivanna Antoniuk-Scheglova, Hanna Havalko, Viktoria Potaskalova, Olena Karmazina, Oksana Onoprienko, Tetiana Ostashevska, Liudmyla Petrenko, Viktoria Bugeruk, Iryna Zaplatynska, Liudmyla Mazurok.

Supplementary Table 3. Demographics, presenting characteristics and medical history at enrolment, for included and excluded (because of missing HbA1c measurement) patients

	Included (*n* = 2377)	Excluded (*n* = 1502)
Demographics		
Mean age, years (SD)	61.4 (10.4)	61.9 (10.5)
Men	1219 (51.3%)	825 (54.9%)
Educational level		
Illiterate	169/2372 (7.1%)	83/1501 (5.5%)
Primary	649/2372 (27.4%)	379/1501 (25.2%)
Secondary	869/2372 (36.6%)	513/1501 (34.2%)
University/higher	685/2372 (28.9%)	526/1501 (35.0%)
Private health insurance		
Yes	514 (21.6%)	212 (14.1%)
No	1724 (72.5%)	1131 (75.3%)
Unknown	139 (5.8%)	159 (10.6%)
Insurance (public or private) that includes drug reimbursement	1290/1815 (71.1%)	544/822 (66.2%)
Presenting characteristics		
Mean BMI, kg/m^2 (SD)*	29.4 (5.5)	29.1 (5.6)
BMI groups, kg/m^2		
<25	474/2339 (20.3%)	327/1488 (22.0%)
25 to <30	921/2339 (39.4%)	598/1488 (40.2%)
≥30	944/2339 (40.4%)	563/1488 (37.8%)
Smoker		
Current*	285 (12.0%)	133 (8.9%)
Former	599 (25.2%)	314 (20.9%)
Never	1493 (62.8%)	1055 (70.2%)
Medical history		

Dyslipidaemia (diagnosis or history of; physician-defined)	2138/2373 (90.1%)	1325/1498 (88.5%)
Hypertension (diagnosis or history of; physician-defined)	2242 (94.3%)	1402 (93.3%)
Type of diabetes		
1	34 (1.4%)	25 (1.7%)
2	2302 (96.9%)	1414 (94.1%)
Unknown	40 (1.7%)	63 (4.2%)
Duration of diabetes, years (SD)	10.6 (7.7)	9.7 (7.9)
Metabolic syndrome[†]	1605/2367 (67.8%)	879/1482 (59.3%)
CAD (documented)	797 (33.5%)	544 (36.2%)
Level of cardiovascular risk		
Level of cardiovascular risk evaluated according to 2016 ESC/EAS guidelines		
High	907 (38.2%)	693 (46.1%)
Very high	1470 (61.8%)	809 (53.9%)
Investigator's assessment of cardiovascular risk		
Low	240 (10.1%)	212 (14.1%)
Moderate	487 (20.5%)	425 (28.3%)
High	894 (37.6%)	379 (25.2%)
Very high	752 (31.6%)	478 (31.8%)
Unknown	4 (0.2%)	8 (0.5%)
Risk factors controlled		
LDL-C target achieved	1044 (43.9%)	634 (42.2%)
SBP <140 mmHg and DBP <90 mmHg	1320 (55.5%)	758 (50.5%)
HbA1c <7%	935 (39.3%)	NA

Data are n (%) or n/*n* (%), unless otherwise specified. *Individuals who smoked any tobacco in the previous 12 months or who quit during past year. [†]Defined according to Adult Treatment Panel III. SD, standard deviation; BMI, body mass index; CAD, coronary artery disease; ESC, European Society of Cardiology; EAS, European Atherosclerosis Society; LDL-C, low-density lipoprotein cholesterol; SBP, systolic blood pressure; DBP, diastolic blood pressure; HbA1c, glycated haemoglobin; NA, not available.

Supplementary Table 4. Demographics, presenting characteristics and medical history at enrolment, overall and by number of physician-modifiable risk factors controlled.

	Number of risk factors controlled				
	None (*n* = 420; 17.7%)	One (*n* = 904; 38.0%)	Two (*n* = 764; 32.1%)	Three (*n* = 289; 12.2%)	Total (*n* = 2377)
Demographics					
Mean age, years (SD)	59.3 (10.3)	61.5 (10.6)	62.0 (10.0)	62.4 (10.4)	61.4 (10.4)
Men	197 (46.9%)	482 (53.3%)	388 (50.8%)	152 (52.6%)	1219 (51.3%)
Educational level					
Illiterate	33/419 (7.9%)	66/902 (7.3%)	50/763 (6.6%)	20/288 (6.9%)	169/2372 (7.1%)
Primary	127/419 (30.3%)	253/902 (28.0%)	209/763 (27.4%)	60/288 (20.8%)	649/2372 (27.4%)
Secondary	136/419 (32.5%)	335/902 (37.1%)	287/763 (37.6%)	111/288 (38.5%)	869/2372 (36.6%)
University/higher	123/419 (29.4%)	248/902 (27.5%)	217/763 (28.4%)	97/288 (33.7%)	685/2372 (28.9%)
Private health insurance					
Yes	72 (17.1%)	169 (18.7%)	195 (25.5%)	78 (27.0%)	514 (21.6%)
No	329 (78.3%)	686 (75.9%)	523 (68.5%)	186 (64.4%)	1724 (72.5%)
Unknown	19 (4.5%)	49 (5.4%)	46 (6.0%)	25 (8.7%)	139 (5.8%)
Insurance (public or private) that includes drug reimbursement	218/313 (69.6%)	482/673 (71.6%)	439/609 (72.1%)	151/220 (68.6%)	1290/1815 (71.1%)

Presenting characteristics

Mean BMI, kg/m^2 (SD)*	30.6 (6.3)	29.4 (5.4)	29.1 (5.2)	28.5 (5.1)	29.4 (5.5)
BMI groups, kg/m^2					
<25	54/415 (13.0%)	197/890 (22.1%)	158/750 (21.1%)	65/284 (22.9%)	474/2339 (20.3%)
25 to <30	156/415 (37.6%)	327/890 (36.7%)	305/750 (40.7%)	133/284 (46.8%)	921/2339 (39.4%)
≥30	205/415 (49.4%)	366/890 (41.1%)	287/750 (38.3%)	86/284 (30.3%)	944/2339 (40.4%)
Smoker					
Current[†]	43 (10.2%)	137 (15.2%)	82 (10.7%)	23 (8.0%)	285 (12.0%)
Former	89 (21.2%)	223 (24.7%)	210 (27.5%)	77 (26.6%)	599 (25.2%)
Never	288 (68.6%)	544 (60.2%)	472 (61.8%)	189 (65.4%)	1493 (62.8%)
Medical history					
Dyslipidaemia (diagnosis or history of; physician-defined)	381/419 (90.9%)	814/903 (90.1%)	682/763 (89.4%)	261/288 (90.6%)	2138/2373 (90.1%)
Hypertension (diagnosis or history of; physician-defined)	374 (89.0%)	844 (93.4%)	735 (96.2%)	289 (100.0%)	2242 (94.3%)
Type of diabetes					
1	8 (1.9%)	15 (1.7%)	10 (1.3%)	1 (0.3%)	34 (1.4%)
2	407 (96.9%)	878 (97.1%)	733 (96.1%)	284 (98.3%)	2302 (96.9%)
Unknown	5 (1.2%)	11 (1.2%)	20 (2.6%)	4 (1.4%)	40 (1.7%)
Duration of diabetes, years (SD)[‡]	11.7 (7.4)	11.7 (8.1)	9.4 (7.1)	8.7 (7.4)	10.6 (7.7)

Metabolic syndrome[§]	323/417 (77.5%)	628/901 (69.7%)	496/762 (65.1%)	158/287 (55.1%)	1605/2367 (67.8%)
CAD (documented)	152 (36.2%)	313 (34.6%)	251 (32.9%)	81 (28.0%)	797 (33.5%)
Atherosclerotic disease[¶]	181 (43.1%)	372 (41.2%)	293 (38.4%)	96 (33.2%)	942 (39.6%)
Level of cardiovascular risk					
Level of cardiovascular risk evaluated according to 2016 ESC/EAS guidelines					
High	117 (27.9%)	285 (31.5%)	349 (45.7%)	156 (54.0%)	907 (38.2%)
Very high	303 (72.1%)	619 (68.5%)	415 (54.3%)	133 (46.0%)	1470 (61.8%)
Investigator's assessment of cardiovascular risk					
Low	34 (8.1%)	91 (10.1%)	80 (10.5%)	35 (12.1%)	240 (10.1%)
Moderate	77 (18.3%)	186 (20.6%)	158 (20.7%)	66 (22.8%)	487 (20.5%)
High	164 (39.0%)	323 (35.7%)	309 (40.4%)	98 (33.9%)	894 (37.6%)
Very high	144 (34.3%)	301 (33.3%)	217 (28.4%)	90 (31.1%)	752 (31.6%)
Unknown	1 (0.2%)	3 (0.3%)	0 (0.0%)	0 (0.0%)	4 (0.2%)
Risk factors controlled					
LDL-C target achieved	0 (0.0%)	253 (28.0%)	502 (65.7%)	289 (100.0%)	1044 (43.9%)
SBP <140 mmHg and DBP <90 mmHg	0 (0.0%)	447 (49.4%)	584 (76.4%)	289 (100.0%)	1320 (55.5%)
HbA1c <7%	0 (0.0%)	204 (22.6%)	442 (57.9%)	289 (100.0%)	935 (39.3%)

Data are n (%) or n/n (%), unless otherwise specified. *n = 415, 890, 750, 284, and 2339 for none, one, two, three and total groups, respectively. [†]Individuals who smoked any tobacco in the previous 12 months or who quit during past year. [‡]n = 409, 856, 718, 268, and 2251 for none, one, two, three and total groups, respectively. [§]Defined according

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to Adult Treatment Panel III. ¶CAD, stroke, or peripheral artery disease. SD, standard deviation; BMI, body mass index; CAD, coronary artery disease; ESC, European Society of Cardiology; EAS, European Atherosclerosis Society; LDL-C, low-density lipoprotein cholesterol; SBP, systolic blood pressure; DBP, diastolic blood pressure; HbA1c, glycated haemoglobin.

Supplementary Table 5. Demographics, presenting characteristics and medical history at enrolment, overall and by number of health-system related risk factors controlled in patients with obesity.

	Number of risk factors controlled				
	None (*n* = 205)	One (*n* = 366)	Two (*n* = 287)	Three (*n* = 86)	Total (*n* = 944)
Demographics					
Mean age, years (SD)	59.6 (9.9)	60.2 (9.7)	61.4 (9.5)	60.5 (9.8)	60.5 (9.7)
Men	77 (37.6%)	175 (47.8%)	116 (40.4%)	42 (48.8%)	410 (43.4%)
Educational level					
Illiterate	15 (7.3%)	31/364 (8.5%)	24/286 (8.4%)	8 (9.3%)	78/941 (8.3%)
Primary	75 (36.6%)	104/364 (28.6%)	92/286 (32.2%)	23 (26.7%)	294/941 (31.2%)
Secondary	66 (32.2%)	133/364 (36.5%)	99/286 (34.6%)	23 (26.7%)	321/941 (34.1%)
University/higher	49 (23.9%)	96/364 (26.4%)	71/286 (24.8%)	32 (37.2%)	248/941 (26.4%)
Private health insurance					
Yes	30 (14.6%)	77 (21.0%)	66 (23.0%)	24 (27.9%)	197 (20.9%)
No	168 (82.0%)	274 (74.9%)	206 (71.8%)	53 (61.6%)	701 (74.3%)
Unknown	7 (3.4%)	15 (4.1%)	15 (5.2%)	9 (10.5%)	46 (4.9%)
Insurance (public or private) that includes drug reimbursement	122 (74.8%)	214 (70.2%)	172 (71.4%)	41 (64.1%)	549 (71.0%)

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Presenting characteristics

Mean BMI, kg/m^2 (SD)	34.8 (6.3)	34.7 (4.0)	34.2 (4.2)	34.4 (4.4)	34.5 (4.6)
Smoker					
Current*	20 (9.8%)	48 (13.1%)	26 (9.1%)	2 (2.3%)	96 (10.2%)
Former	39 (19.0%)	85 (23.2%)	74 (25.8%)	24 (27.9%)	222 (23.5%)
Never	146 (71.2%)	233 (63.7%)	187 (65.2%)	60 (69.8%)	626 (66.3%)
Medical history					
Dyslipidaemia (diagnosis or history of; physician defined)	185 (90.2%)	340/365 (93.2%)	263 (91.6%)	77 (89.5%)	865/943 (91.7%)
Hypertension (diagnosis or history of; physician defined)	189 (92.2%)	349 (95.4%)	278 (96.9%)	86 (100.0%)	902 (95.6%)
Type of diabetes					
1	4 (2.0%)	5 (1.4%)	5 (1.7%)	0 (0.0%)	14 (1.5%)
2	201 (98.0%)	359 (98.1%)	273 (95.1%)	85 (98.8%)	918 (97.2%)
Unknown	0 (0.0%)	2 (0.5%)	9 (3.1%)	1 (1.2%)	12 (1.3%)
Duration of diabetes, years (SD)†	11.5 (7.3)	11.6 (7.7)	9.0 (7.3)	8.9 (6.9)	10.5 (7.5)
Metabolic syndrome‡	174/204 (85.3%)	302 (82.5%)	224/286 (78.3%)	59/85 (69.4%)	759/941 (80.7%)
CAD (documented)	73 (35.6%)	132 (36.1%)	90 (31.4%)	18 (20.9%)	313 (33.2%)
Level of cardiovascular risk					

Level of cardiovascular risk evaluated according to 2016 ESC/EAS guidelines					
High	61 (29.8%)	113 (30.9%)]	139 (48.4%)	54 (62.8%)	367 (38.9%)
Very high	144 (70.2%)	253 (69.1%)	148 (51.6%)	32 (37.2%)	577 (61.1%)
Investigator's assessment of cardiovascular risk					
Low	13 (6.3%)	25 (6.8%)	25 (8.7%)	9 (10.5%)	72 (7.6%)
Moderate	36 (17.6%)	66 (18.0%)	55 (19.2%)	23 (26.7%)	180 (19.1%)
High	76 (37.1%)	128 (35.0%)	113 (39.4%)	26 (30.2%)	343 (36.3%)
Very high	80 (39.0%)	146 (39.9%)	94 (32.8%)	28 (32.6%)	348 (36.9%)
Unknown	0 (0.0%)	1 (0.3%)	0 (0.0%)	0 (0.0%)	1 (0.1%)
Risk factors controlled					
LDL-C target achieved	0 (0.0%)	107 (29.2%)	189 (65.9%)	86 (100.0%)	382 (40.5%)
SBP <140 mmHg and DBP <90 mmHg	0 (0.0%)	175 (47.8%)	217 (75.6%)	86 (100.0%)	478 (50.6%)
HbA1c <7%	0 (0.0%)	84 (23.0%)	168 (58.5%)	86 (100.0%)	338 (35.8%)

Data are n (%) or n/n (%), unless otherwise specified. *n = 200, 352, 275, 83, and 910 for none, one, two, three, and total groups, respectively. [†]Individuals who smoked any tobacco in the previous 12 months or who quit during past year. [‡]Defined according to Adult Treatment Panel III. SD, standard deviation; BMI, body mass index; CAD, coronary artery disease; ESC, European Society of Cardiology; EAS, European Atherosclerosis Society; LDL-C, low-density lipoprotein cholesterol; SBP, systolic blood pressure; DBP, diastolic blood pressure; HbA1c, glycated haemoglobin.

Supplementary Table 6. Lipid-modifying, antidiabetic and antihypertensive therapies at enrolment, overall and by number of health-system related risk factors controlled in patients with obesity

	Number of risk factors controlled				
	None (*n* = 205)	One (*n* = 366)	Two (*n* = 287)	Three (*n* = 86)	Total (*n* = 944)
LMT					
Any statin	200 (97.6%)	360 (98.4%)	281 (97.9%)	84 (97.7%)	925 (98.0%)
High-intensity statin (in statin-treated patients)	69/200 (34.5%)	100/360 (27.8%)	74/281 (26.3%)	17/84 (20.2%)	260/925 (28.1%)
On highest dose of statin (in statin-treated patients)	55/200 (27.5%)	94/360 (26.1%)	75/281 (26.7%)	18/84 (21.4%)	242/925 (26.2%)
Statin monotherapy	169 (82.4%)	307 (83.9%)	254 (88.5%)	71 (82.6%)	801 (84.9%)
Statin+fibrate±other LMT	23 (11.2%)	38 (10.4%)	17 (5.9%)	8 (9.3%)	86 (9.1%)
Statin+cholesterol absorption inhibitor±other LMT	3 (1.5%)	9 (2.5%)	7 (2.4%)	3 (3.5%)	22 (2.3%)
Antihypertensive therapies					
Any antihypertensive therapy					
Yes	191 (93.2%)	342 (93.4%)	265 (92.3%)	84 (97.7%)	882 (93.4%)
No	13 (6.3%)	22 (6.0%)	16 (5.6%)	2 (2.3%)	53 (5.6%)
Unknown	1 (0.5%)	2 (0.5%)	6 (2.1%)	0 (0.0%)	9 (1.0%)
ACEI	78 (38.0%)	122 (33.3%)	77 (26.8%)	14 (16.3%)	291 (30.8%)
ARB	97 (47.3%)	175 (47.8%)	158 (55.1%)	65 (75.6%)	495 (52.4%)

Diuretic	87 (42.4%)	136 (37.2%)	100 (34.8%)	43 (50.0%)	366 (38.8%)
Beta-blocker	79 (38.5%)	150 (41.0%)	123 (42.9%)	35 (40.7%)	387 (41.0%)
Calcium-channel blocker	79 (38.5%)	130 (35.5%)	82 (28.6%)	35 (40.7%)	326 (34.5%)
Other antihypertensive	11 (5.4%)	31 (8.5%)	17 (5.9%)	1 (1.2%)	60 (6.4%)
Any antihypertensive combination therapy	140 (68.3%)	245 (66.9%)	189 (65.9%)	63 (73.3%)	637 (67.5%)
ACEI±other antihypertensive therapy	56 (27.3%)	91 (24.9%)	58 (20.2%)	11 (12.8%)	217 (23.0%)
ARB±other antihypertensive therapy	77 (37.6%)	140 (38.3%)	126 (43.9%)	50 (58.1%)	393 (41.6%)
ACEI+ARB±other antihypertensive therapy	4 (2.0%)	7 (1.9%)	0 (0.0%)	1 (1.2%)	12 (1.3%)
Antidiabetic therapies					
Any antidiabetic therapy	204 (99.5%)	364 (99.5%)	276 (96.2%)	86 (100.0%)	930 (98.5%)
Insulin					
Yes	118 (57.6%)	183 (50.0%)	102/286 (35.7%)	22 (25.6%)	425/943 (45.1%)
No	85 (41.5%)	175 (47.8%)	176 (61.5%)	61 (70.9%)	497 (52.7%)
Unknown	2 (1.0%)	8 (2.2%)	8 (2.8%)	3 (3.5%)	21 (2.2%)
Oral antidiabetic					
Yes	169 (82.4%)	318 (86.9%)	254 (88.5%)	85 (98.8%)	826 (87.5%)
No	32 (15.6%)	45 (12.3%)	27 (9.4%)	1 (1.2%)	105 (11.1%)
Unknown	4 (2.0%)	3 (0.8%)	6 (2.1%)	0 (0.0%)	13 (1.4%)

Data are n (%) or n/n (%). LMT, lipid-modifying therapy; ACEI, angiotensin-converting enzyme inhibitor; ARB, Angiotensin II receptor blocker.

Supplementary Table 7. Demographics, presenting characteristics and medical history at enrolment, overall and by number of health-system related risk factors controlled in patients with atherosclerotic disease.*

	Number of risk factors controlled				
	None (*n* = 181)	One (*n* = 372)	Two (*n* = 293)	Three (*n* = 96)	Total (*n* = 942)
Demographics					
Mean age, years (SD)	61.5 (9.7)	63.9 (10.1)	65.3 (9.1)	65.2 (9.5)	64.0 (9.7)
Men	104 (57.5%)	245 (65.9%)	192 (65.5%)	69 (71.9%)	610 (64.8%)
Educational level					
Illiterate	19 (10.5%)	33 (8.9%)	21 (7.2%)	3 (3.1%)	76 (8.1%)
Primary	41 (22.7%)	108 (29.0%)	83 (28.3%)	20 (20.8%)	252 (26.8%)
Secondary	58 (32.0%)	129 (34.7%)	106 (36.2%)	46 (47.9%)	339 (36.0%)
University/higher	63 (34.8%)	102 (27.4%)	83 (28.3%)	27 (28.1%)	275 (29.2%)
Private health insurance					
Yes	38 (21.0%)	63 (16.9%)	72 (24.6%)	23 (24.0%)	196 (20.8%)
No	137 (75.7%)	294 (79.0%)	213 (72.7%)	67 (69.8%)	711 (75.5%)
Unknown	6 (3.3%)	15 (4.0%)	8 (2.7%)	6 (6.3%)	35 (3.7%)
Insurance (public or private) that includes drug reimbursement	97/141 (68.8%)	202/297 (68.0%)	192/254 (75.6%)	56/76 (73.7%)	547/768 (71.2%)

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Presenting characteristics

Mean BMI, kg/m^2 (SD)[†]	30.2 (5.2)	29.5 (5.4)	28.5 (4.6)	27.6 (4.7)	29.1 (5.1)
BMI groups, kg/m^2					
<25	25/179 (14.0%)	78/365 (21.4%)	65/287 (22.6%)	24/94 (25.5%)	192/925 (20.8%)
25 to <30	67/179 (37.4%)	133/365 (36.4%)	120/287 (41.8%)	50/94 (53.2%)	370/925 (40.0%)
≥30	87/179 (48.6%)	154/365 (42.2%)	102/287 (35.5%)	20/94 (21.3%)	363/925 (39.2%)
Smoker					
Current[‡]	20 (11.0%)	63 (16.9%)	39 (13.3%)	12 (12.5%)	134 (14.2%)
Former	52 (28.7%)	128 (34.4%)	118 (40.3%)	44 (45.8%)	342 (36.3%)
Never	109 (60.2%)	181 (48.7%)	136 (46.4%)	40 (41.7%)	466 (49.5%)
Medical history					
Dyslipidaemia (diagnosis or history of; physician-defined)	159/180 (88.3%)	326/371 (87.9%)	245/293 (83.6%)	82/95 (86.3%)	812/939 (86.5%)
Hypertension (diagnosis or history of; physician-defined)	171 (94.5%)	361 (97.0%)	287 (98.0%)	96 (100.0%)	915 (97.1%)
Type of diabetes					
1	7 (3.9%)	6 (1.6%)	3/292 (1.0%)	0 (0.0%)	16/941 (1.7%)
2	173 (95.6%)	357 (96.0%)	285/292 (97.6%)	95 (99.0%)	910/941 (96.7%)
Unknown	1 (0.6%)	9 (2.4%)	4/292 (1.4%)	1 (1.0%)	15/941 (1.6%)
Duration of diabetes, years (SD)[§]	12.9 (7.9)	12.7 (8.9)	10.2 (7.4)	8.2 (7.8)	11.5 (8.3)

Metabolic syndrome¶	145/180 (80.6%)	277/372 (74.5%)	192/293 (65.5%)	58/96 (60.4%)	672/941 (71.4%)
CAD (documented)	152 (84.0%)	313 (84.1%)	251 (85.7%)	81 (84.4%)	797 (84.6%)
Level of cardiovascular risk					
Investigator's assessment of cardiovascular risk					
Low	6 (3.3%)	8 (2.2%)	6 (2.0%)	3 (3.1%)	23 (2.4%)
Moderate	25 (13.8%)	40 (10.8%)	36 (12.3%)	12 (12.5%)	113 (12.0%)
High	56 (30.9%)	119 (32.0%)	93 (31.7%)	23 (24.0%)	291 (30.9%)
Very high	94 (51.9%)	205 (55.1%)	158 (53.9%)	58 (60.4%)	515 (54.7%)
Risk factors controlled					
LDL-C target achieved	0 (0.0%)	89 (23.9%)	175 (59.7%)	96 (100.0%)	360 (38.2%)
SBP <140 mmHg and DBP < 90 mmHg	0 (0.0%)	207 (55.6%)	229 (78.2%)	96 (100.0%)	532 (56.5%)
HbA1c <7%	0 (0.0%)	76 (20.4%)	182 (62.1%)	96 (100.0%)	354 (37.6%)

Data are n (%) or n/n (%), unless otherwise specified. *CAD, stroke or peripheral artery disease. †n = 179, 365, 287, 84, and 925 for none, one, two, three and total groups, respectively. ‡Individuals who smoked any tobacco in the previous 12 months or who quit during past year. §n = 177, 347, 275, 89, and 888 for none, one, two, three and total groups, respectively. ¶Defined according to Adult Treatment Panel III. SD, standard deviation; BMI, body mass index; CAD, coronary artery disease; LDL-C, low-density lipoprotein cholesterol; SBP, systolic blood pressure; DBP, diastolic blood pressure; HbA1c, glycated haemoglobin.
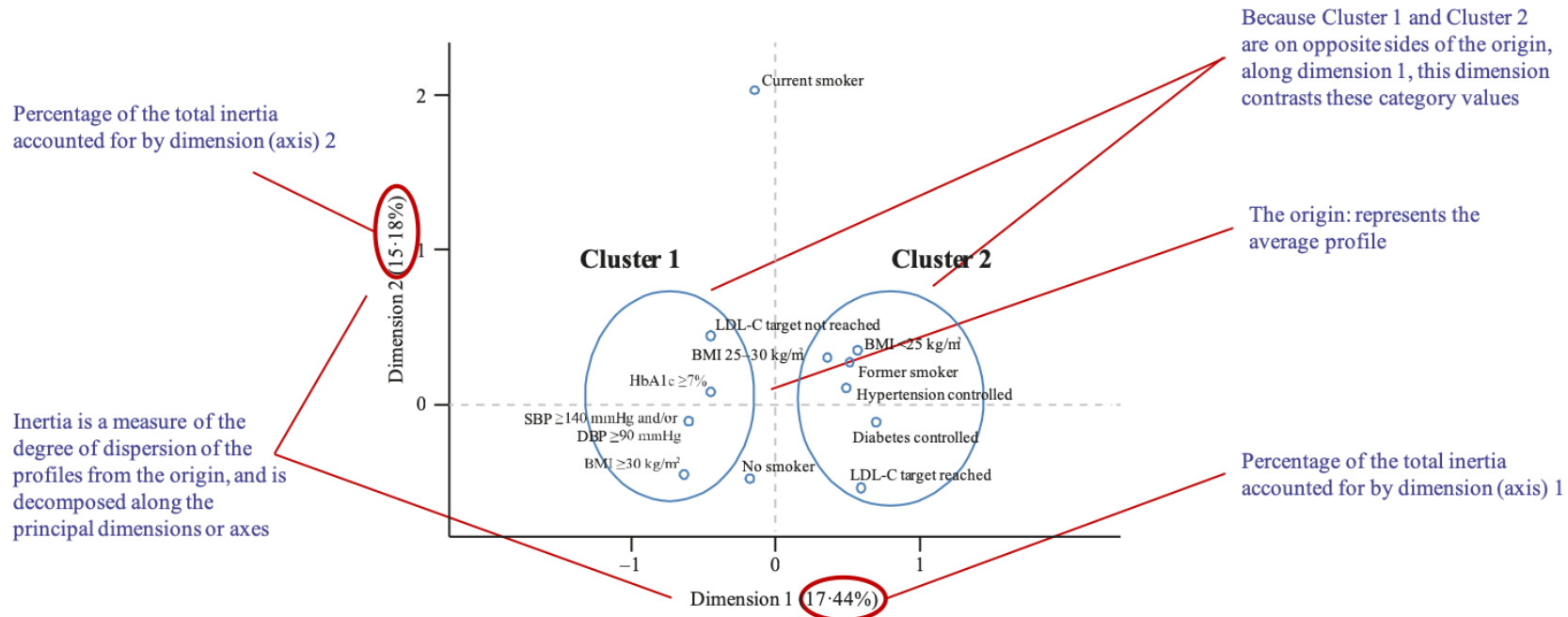
Supplementary Table 8. Lipid-modifying, antidiabetic and antihypertensive therapies at enrolment, overall and by number of health-system-related risk factors controlled in patients with atherosclerotic disease*.

	Number of risk factors controlled				
	None (*n* = 181)	One (*n* = 372)	Two (*n* = 293)	Three (*n* = 96)	Total (*n* = 942)
LMT					
Any statin	178 (98.3%)	367 (98.7%)	291 (99.3%)	96 (100.0%)	932 (98.9%)
High-intensity statin (in statin-treated patients)	67/178 (37.6%)	132/367 (36.0%)	99/291 (34.0%)	35/96 (36.5%)	333/932 (35.7%)
On highest dose of statin (in statin-treated patients)	61/178 (34.3%)	117/367 (31.9%)	92/291 (31.6%)	25/96 (26.0%)	295/932 (31.7%)
Statin monotherapy	145 (80.1%)	310 (83.3%)	254 (86.7%)	84 (87.5%)	793 (84.2%)
Statin+fibrate±other LMT	15 (8.3%)	38 (10.2%)	23 (7.8%)	3 (3.1%)	79 (8.4%)
Statin+cholesterol absorption inhibitor±other LMT	10 (5.5%)	15 (4.0%)	4 (1.4%)	4 (4.2%)	33 (3.5%)
Antihypertensive therapies					
Any antihypertensive therapy					
Yes	176 (97.2%)	365 (98.1%)	287 (98.0%)	94 (97.9%)	922 (97.9%)
No	2 (1.1%)	4 (1.1%)	4 (1.4%)	2 (2.1%)	12 (1.3%)
Unknown	3 (1.7%)	3 (0.8%)	2 (0.7%)	0 (0.0%)	8 (0.8%)
ACEI	67 (37.0%)	130 (34.9%)	89 (30.4%)	20 (20.8%)	306 (32.5%)
ARB	82 (45.3%)	163 (43.8%)	143 (48.8%)	52 (54.2%)	440 (46.7%)

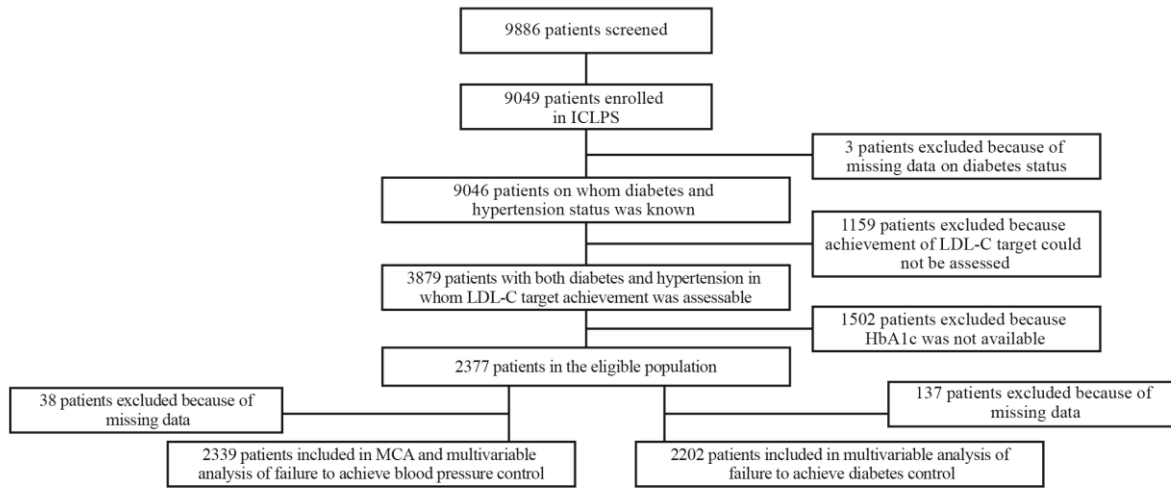|					
Diuretic	77 (42.5%)	139 (37.4%)	101 (34.5%)	38 (39.6%)	355 (37.7%)
Beta-blocker	110 (60.8%)	245 (65.9%)	189 (64.5%)	63 (65.6%)	607 (64.4%)
Calcium-channel blocker	68 (37.6%)	130 (34.9%)	76 (25.9%)	28 (29.2%)	302 (32.1%)
Other antihypertensive	16 (8.8%)	36 (9.7%)	21 (7.2%)	4 (4.2%)	77 (8.2%)
Any antihypertensive combination therapy	141 (77.9%)	281 (75.5%)	212 (72.4%)	66 (68.8%)	700 (74.3%)
ACEI±other antihypertensive therapy	58 (32.0%)	112 (30.1%)	80 (27.3%)	19 (19.8%)	269 (28.6%)
ARB±other antihypertensive therapy	74 (40.9%)	142 (38.2%)	115 (39.2%)	40 (41.7%)	371 (39.4%)
ACEI+ARB±other antihypertensive therapy	2 (1.1%)	4 (1.1%)	1 (0.3%)	0 (0.0%)	7 (0.7%)
Antidiabetic therapies					
Any antidiabetic therapy	181 (100.0%)	367 (98.7%)	289 (98.6%)	94 (97.9%)	931 (98.8%)
Insulin					
Yes	95 (52.5%)	167 (44.9%)	91/291 (31.3%)	13 (13.5%)	366/940 (38.9%)
No	85 (47.0%)	199 (53.5%)	196 (67.4%)	80 (83.3%)	560 (59.6%)
Unknown	1 (0.6%)	6 (1.6%)	4 (1.4%)	3 (3.1%)	14 (1.5%)
Oral antidiabetic					
Yes	153 (84.5%)	306 (82.3%)	257 (87.7%)	90 (93.8%)	806 (85.6%)
No	24 (13.3%)	59 (15.9%)	30 (10.2%)	4 (4.2%)	117 (12.4%)
Unknown	4 (2.2%)	7 (1.9%)	6 (2.0%)	2 (2.1%)	19 (2.0%)

Data are n (%) or n/n (%). *CAD, stroke, or peripheral artery disease. LMT, lipid-modifying therapy; ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin II receptor blocker.

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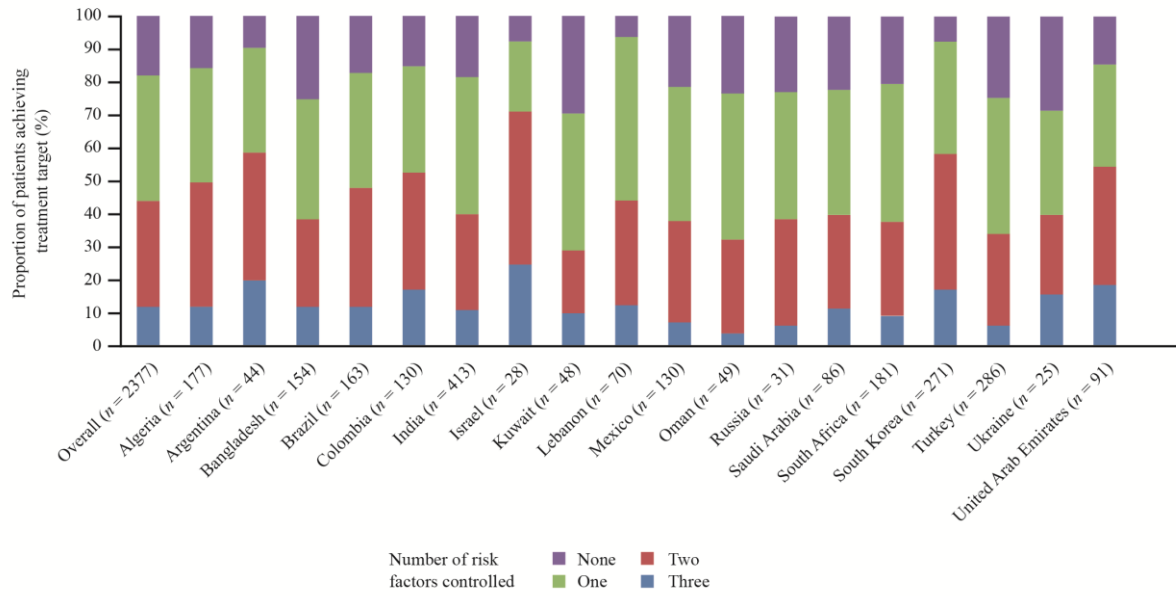**Supplementary Figure 1. Annotated example of the output of a multiple correspondence analysis.[2, 3]**

Multiple correspondence analysis (MCA) is based on the analysis of categorical data with a contingency table, which enables the assessment of interactions between the variables. MCA graphically represents the relationships between multiple categories that would be too complex to display in a contingency table. MCA locates all the categories (rows and columns of the contingency table) as profiles in a multidimensional space. The average profile is represented as a point at the origin. Inertia is a measure of the degree of dispersion of the profiles from the origin. Profiles that cluster together within the space represented by these dimensions are considered to be associated.

BMI, body mass index; DBP, diastolic blood pressure; LDL-C, low-density lipoprotein cholesterol; HBA1c, glycated haemoglobin; SBP, systolic blood pressure.

Supplementary Figure 2. Patient flow chart

ICLPS, International ChoLesterol management Practice Study; LDL-C, low-density lipoprotein cholesterol;

HbA1c, glycated haemoglobin; MCA, multiple correspondence analysis.

Supplementary Figure 3: Proportion of ICLPS participants with both diabetes and hypertension a) with none, one, two and three risk factors controlled at enrolment, overall and by country
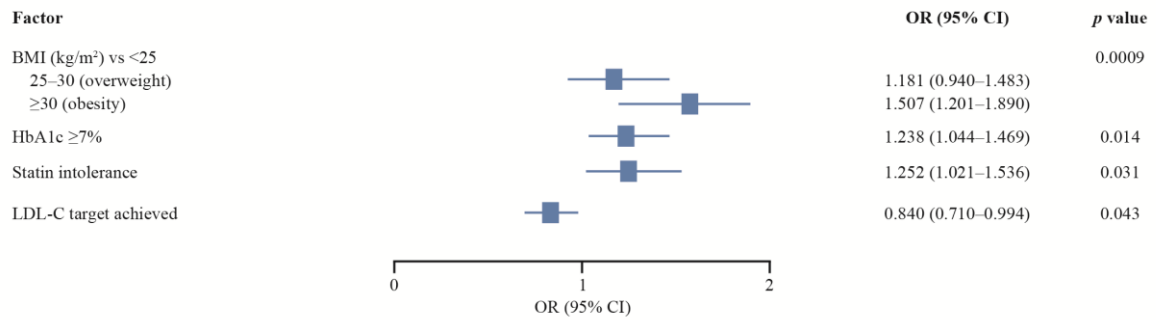

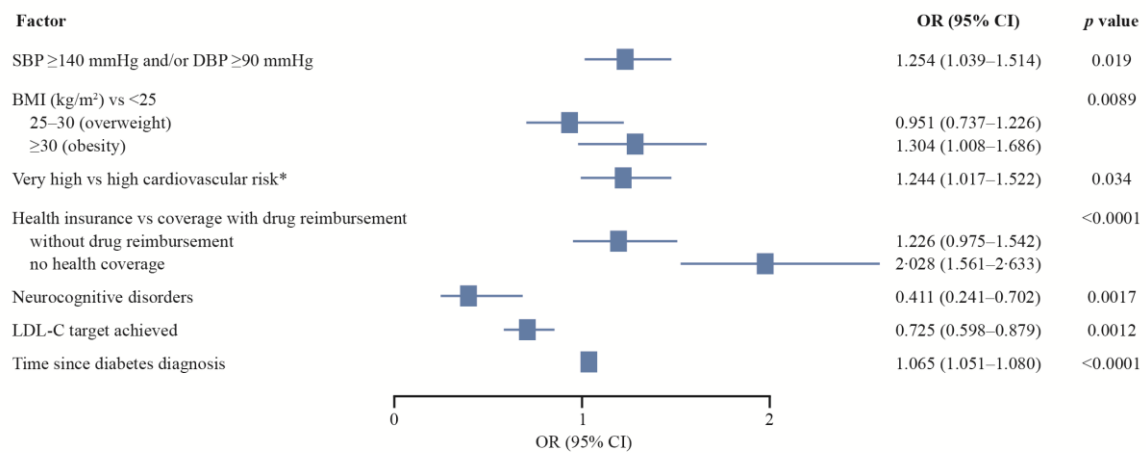ICLPS, International ChoLesterol management Practice Study.

Supplementary Figure 4. Patient factors independently associated with a) SBP ≥140 mmHg and/or DBP ≥90 mmHg (*n* = 2339; *C*-statistic: 0.433 [0.409; 0.456]) b) HbA1c ≥7% (*n* = 2107; *C*-statistic: 0.3295 [0.3057; 0.3532])

a)

Factor	OR (95% CI)	*p* value
BMI (kg/m²) vs <25		0.0009
25–30 (overweight)	1.181 (0.940–1.483)	
≥30 (obesity)	1.507 (1.201–1.890)	
HbA1c ≥7%	1.238 (1.044–1.469)	0.014
Statin intolerance	1.252 (1.021–1.536)	0.031
LDL-C target achieved	0.840 (0.710–0.994)	0.043

b)

Factor	OR (95% CI)	*p* value
SBP ≥140 mmHg and/or DBP ≥90 mmHg	1.254 (1.039–1.514)	0.019
BMI (kg/m²) vs <25		0.0089
25–30 (overweight)	0.951 (0.737–1.226)	
≥30 (obesity)	1.304 (1.008–1.686)	
Very high vs high cardiovascular risk*	1.244 (1.017–1.522)	0.034
Health insurance vs coverage with drug reimbursement		<0.0001
without drug reimbursement	1.226 (0.975–1.542)	
no health coverage	2·028 (1.561–2·633)	
Neurocognitive disorders	0.411 (0.241–0.702)	0.0017
LDL-C target achieved	0.725 (0.598–0.879)	0.0012
Time since diabetes diagnosis	1.065 (1.051–1.080)	<0.0001

*Assessed according to 2016 ESC/EAS guidelines. SBP, systolic blood pressure; DBP, diastolic blood pressure; HBA1c, glycated haemoglobin; OR, odds ratio; CI, confidence interval; LDL-C, low-density lipoprotein cholesterol.

References

1. Perk J, De Backer G, Gohlke H, et al. European Guidelines on cardiovascular disease prevention in clinical practice (version 2012). The Fifth Joint Task Force of the European Society of Cardiology and Other Societies on Cardiovascular Disease Prevention in Clinical Practice (constituted by representatives of nine societies and by invited experts). Developed with the special contribution of the European Association for Cardiovascular Prevention & Rehabilitation (EACPR). *Eur Heart J* 2012; 33: 1635–1701.

2. Greenacre MJ. *Theory and Applications of Correspondence Analysis*. London: Academic Press, 1984.

3. Minitab Inc. Example of multiple correspondence analysis, https://support.minitab.com/en-us/minitab/18/help-and-how-to/modeling-statistics/multivariate/how-to/multiple-correspondence-analysis/before-you-start/example/ (2017, accessed 5 February 2019).